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PECULIAR EFFECTS DUE TO A LIGHTNING DISCHARGE ON LAKE CHAMPLAIN IN AUGUST 1900.

AFTER a period of long continued drought, when the ground was very dry, a thunder shower arose in the Adirondacks, which passed east, crossing Lake Champlain over Westport and along south of the crest of Split Rock Mountain. No rain fell north of the top of the mountain, but a very severe storm passed to the south. When the storm had nearly disappeared, a sudden discharge of lightning passed down from the clouds, striking about half way down the northern slope of the mountain, entirely outside of the rain area and into the dry trees and rocks. In about a half a minute a cloud of what appeared to be dust could be seen rising from among the pines and juniper bushes. This, however, in a couple of minutes proved to be smoke, and in less than five minutes a very well developed forest fire was under way. Fortunately, a number of persons saw the discharge and saw the fire start, and immediately hastening to the spot were able to extinguish the fire before it had burned over more than a small fraction of an acre.

The peculiarity of the discharge was immediately observed upon coming upon the locality. An old pine tree seemed to have received the most severe part of the discharge and was badly split in the familiar manner. In addition to this, however, a number of places were immediately noticed where the lightning had struck either into the rocks or into the dirt overlying the rock. In two cases the discharge into the rock was of such force as to split the rock, tearing up fragments weighing as much as fifty to one hundred pounds and scattering them about. In other places the discharge upon the rock was comparatively slight, producing simply small fractures in the rock, and in some cases the effect was so slight as to simply remove the dry moss, leaving a small white spot not as large as the finger-nail. These partial

discharges of such varying force were scattered over an area of perhaps thirty to forty feet square, the more violent ones being within twelve or fifteen feet of each other. Upon examining the point at which any one of these discharges struck, a white incrustation was apparent upon the rock, as if white paint had either been spattered about or had been spread over as a rough, branching, straggling line. These white incrustations, in some cases, could be traced for a foot or more down into the cracks between the rocks. In other cases, they were mere spots. These white streaks were, undoubtedly, the paths along which the electricity ran, and a superficial examination showed that the white was due to an incipient fusion of the surface of the rock. Unfortunately, it was not practicable to get satisfactory photographs of these markings or to bring in large specimens. Small specimens, however, were brought in, and have been subjected to investigation.

The probable explanation of the scattering discharge of this particular lightning is to be found in the extreme dryness of the ground. The cloud charged with electricity would, of course, induce the opposite kind in the trees and rocks immediately beneath it. Then, when the discharge came, it was necessary that each prominence should discharge to the cloud *individually*, because the ground connecting the different prominences was too poor a conductor to rapidly collect the quantities of electricity and discharge them through a single point, as is usually the case.

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